Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for determining the position of an object, comprising:

providing at least two ~~one or more~~ electromagnetic (EM) beams, said at least two EM beams being provided from two different EM sources;

dispersing said at least two ~~one or more~~ EM beams, respectively, into a scanning space by frequency;

retro-reflecting at least a portion of said respective dispersed beams off an object positioned within said scanning space; and

determining, in response to frequencies associated with said retro-reflected beams, respective angular positions of said object;

triangulating coordinates of said object using two or more of said respective angular positions.

2. (cancel)

3. (original) The method of claim 1, further comprising:

triangulating spatial coordinates of said object using three or more of said respective angular positions.

4. (currently amended) The method of claim 1, wherein said at least two ~~one or more~~ EM beams are broadband beams.

5. (currently amended) The method of claim 1, wherein said at least two ~~one or more~~ EM beams are narrowband beams that are tuned or swept across a range of frequencies.

6. (currently amended) The method of claim 1, further comprising:

rotating polarization state of said at least two ~~one or more~~ EM beams; and

rotating polarization state of said retro-reflected beams, such that said at least two ~~one or more~~ EM beams and said retro-reflected beams are treated differently by polarizing beam splitters located in respective paths.

7. (currently amended) A position determination system, comprising:

at least two ~~one or more~~ electromagnetic (EM) sources that provide EM beams;

at least two ~~one or more~~ beam dispersion devices that respectively disperse said at least two ~~one or more~~ EM beams into a scanning space by frequency, wherein said system is configured to be responsive to a retro-reflective object positioned within said scanning space such that said retro-reflective object retro-reflects, at least a portion of said respective dispersed beams; ~~and~~

at least two ~~one or more~~ receptors that receive said respective retro-reflected beams and provide signals for determining respective angular positions of said retro-reflective object;

a processor, in signal communication with said at least two receptors, that determines, in response to frequencies associated with said respective retro-reflective beams, said respective angular positions of said retro-reflective object;

wherein said processor triangulates coordinates of said retro-reflective object using at least two of said respective angular positions.

8. (canceled)

9. (canceled)

10. (currently amended) The system of claim 7~~9~~, wherein said at least two ~~one or more~~ EM sources provide elliptical EM beams so as to improve tracking range of said retro-reflective object along a direction orthogonal to said scanning space.

11. (currently amended) The system of claim 7~~8~~, wherein said processor triangulates

spatial coordinates of said retro-reflective object using at least three of said respective angular positions.

12. (currently amended) The system of claim 7~~8~~, wherein said at least two ~~one or more~~ EM sources include respective narrowband tunable sources for providing said respective EM beams in respective frequencies.

13. (currently amended) The system of claim 12, wherein said respective frequencies are known and wherein:

said at least two ~~one or more~~ receptors include respective photodetectors configured to detect receipt of said respective retro-reflected beams; and

said processor is configured to use said respective known frequencies to determine respective angular positions when receipt of said respective retro-reflected beams is detected.

14. (currently amended) The system of claim 12, wherein:

said at least two ~~one or more~~ receptors include respective wavemeters configured to detect receipt of said respective retro-reflected beams; and

said processor is configured to determine that said respective retro-reflected beams have said respective frequencies and use said respective frequencies to determine respective angular positions when receipt of said respective retro-reflected beams is detected.

15. (currently amended) The system of claim 7~~8~~, wherein:

said at least two ~~one or more~~ EM sources include respective broadband sources that provide said respective EM beams;

said at least two ~~one or more~~ receptors include respective wavemeters that determine frequencies of said respective retro-reflected beams;

said processor is configured to use said frequencies of said respective retro-reflected beams to determine said respective angular positions when receipt of said respective retro-reflected beams is detected.

16. (currently amended) The system of claim 7, wherein:

said at least two ~~one or more~~ beam dispersion devices are selected from said group of beam dispersion devices consisting of a diffraction grating, a prism, and a holographic element.

17. (currently amended) The system of claim 7, further comprising:

at least two ~~one or more~~ partially reflective surfaces that direct said respective EM beams from said at least two ~~one or more~~ EM sources to said at least two ~~one or more~~ beam dispersion devices and that pass said respective retro-reflected beams to said at least two ~~one or more~~ receptors.

18. (currently amended) The system of claim 17, wherein said at least two ~~one or more~~ partially reflective surfaces include polarized beam splitters, wherein said system further comprises:

at least two ~~one or more~~ polarization state rotators positioned between respective polarized beam splitters and said retro-reflected object, wherein

said polarization state of said respective EM beams causes said respective polarized beam splitters to reflect said respective EM beams, and wherein

said at least two ~~one or more~~ polarization state rotators rotate said polarization state of said respective EM beams and said respective retro-reflected beams such that said polarization state of said respective retro-reflected beams causes said respective polarized beam splitters to pass said respective retro-reflected beams to said respective receptors.

19. (withdrawn) A computer readable medium containing a computer program product for determining said position of a retro-reflective object, said computer program product comprising:

program instructions that compute an angular position according to a frequency value when an input indicating a retro-reflected beam has been detected is received.

20. (withdrawn) The computer program product of claim 19, further comprising:

program instructions that compute additional angular positions according to additional frequency values when inputs indicating additional retro-reflected beams have been detected are received; and

program instructions that triangulate coordinates using said angular position and said additional angular positions.

21. (withdrawn) The computer program product of claim 19, wherein:

said frequency value is accepted from a tunable electromagnetic source; and

said input indicating said retro-reflected beam has been detected is received from a photodetector.

22. (withdrawn) The computer program product of claim 19, wherein:

said frequency value is accepted from a wavemeter; and

said input indicating said retro-reflected beam has been detected is said frequency value itself.